

IN THE NAME OF GOD

Third series of nursing informatics international online short course

Technology Solutions for Telenursing and Generating Knowledge

A two month short course:

April 16th, 23rd, 30th, May 7th, 2022

May 14th to June 16th, 2022

 **TEHRAN UNIVERSITY OF MEDICAL SCIENCES**

The International **Online Course**

April 16–May 7
2022

13:30 – 15:30 GMT
18:00 – 20:00 IRAN



Technology Solutions for Telenursing and Generating Knowledge

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<p><i>Topic: Connected health building blocks</i> 16 April 2022</p>	<p><i>Topic 1: Supporting technologies-Big data/NI/CDS</i> 16 April 2022 <i>Topic 2: Mobile health in nursing and Issues</i> 7 May 2022</p>
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<p><i>Topic 1: Telehealth/telenursing, different types and barriers</i> 23 April 2022 <i>Topic 2: Integration of telenursing into electronic health records</i> 30 April 2022</p>	<p><i>Topic: Client and nurse experiences of telenursing</i> 30 April 2022</p>

Director: Dr. Khatereh Seylani & **Moderator:** Dr. Asieh Darvish
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Client and nurse experiences of telenursing

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April 30th, 2022

Introduction

- Tele is a prefix, meaning “**at a distance**”
- **Telenursing** is the use of “information technology to deliver nursing care and conduct nursing practice at a distance”
- Nurses engaged in telenursing practice continue to assess, plan, intervene, and evaluate the outcomes of nursing care, but they do so using technologies such as the Internet, computers, telephones, digital assessment tools, and tele-monitoring equipment and **telehealth tools**.

Schlachta L, Sparks S. Definitions of telenursing, telemedicine. In: Fitzpatrick J, ed. Encyclopedia of Nursing Research. New York: Springer Publishing, Inc; 1998.p. 558-59.

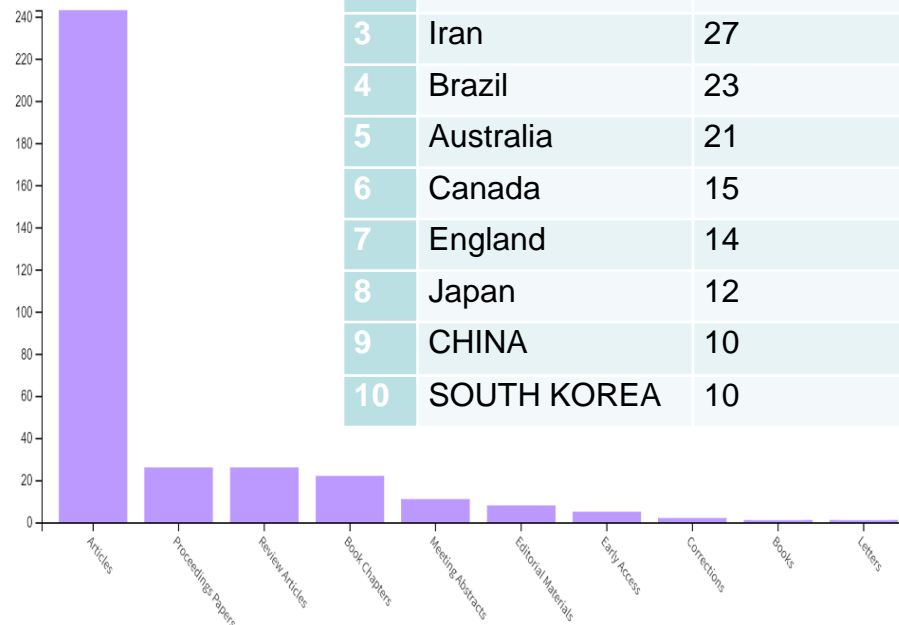
Objectives

- Examples of implemented tele-nursing cases and the outcomes
- Why nurses choose telenursing?
- Why health care clients choose telenursing?

10 most prolific countries

- Telenursing keyword search in WoS 4/25/2022
- **310** results

No	Prolific Countries	Number of articles	%
1	USA	80	25.80
2	Sweden	34	10.96
3	Iran	27	8.71
4	Brazil	23	7.41
5	Australia	21	6.45
6	Canada	15	4.83
7	England	14	4.51
8	Japan	12	3.87
9	CHINA	10	3.22
10	SOUTH KOREA	10	3.22



Report of an International Telenursing Survey

- This article reports the findings of a 2004-2005 survey, which portrays an international sample of **nurses (n = 719)** working with telehealth technologies. The respondents came from a total of **36 countries**.
- The majority of the respondents were from the US, representing 49 of 50 states. The survey provides important information about
 - 1-the characteristics of telenurses;
 - 2-the satisfaction of telenurses with their current telenursing role;
 - 3-the specific knowledge and skills used by telenurses;
 - 4- the settings in which knowledge, skills, and competencies were developed;
 - 5-telenurses' opinions on education in telehealth;
 - 6- telenurses' perceptions about the effectiveness of telenursing in making an impact on the nursing shortage; and
 - 7-the demand for telenurses worldwide

Grady JL, Schlachta-Fairchild L. Report of the 2004-2005 international telenursing survey. CIN: Computers, Informatics, Nursing. 2007 Sep 1;25(5):266-72.

Nurse satisfaction

719 **nurses** from 36 countries participated, of which 628 were female. The age of the subjects was from 22 to 84 years and the average age was 48.

Most of them were satisfied with the following:

- ✓ Autonomy
- ✓ Interaction
- ✓ Professional status
- ✓ Pay
- ✓ Task requirements
- ✓ Organizational policies

Where telenurses worked in

- Hospital 27%
- College 11%
- Community 9.7%
- Call Center 8.9%
- Govt 8.2%
- Clinic 4.5%
- Military 2.1% 3.1

Types of Patients

Types of Patients treated	%
Chronic care	16%
Med Surg	14%
Peds	11%
Coronary	9%
Psych	8%
OB	8%
Neuro	7%
Ortho	7%
Newborn	6%
Rehab	5%
Other	9%

Grady JL, Schlachta-Fairchild L, 2007, Report of International Telenursing Survey

Reasons for Consulting on the Internet

Of the participants(1223) in the survey 322 (26%) were male and 901 (74%) female. As major reasons for choosing

to consult previously-unknown doctors on the Internet participants indicated:

- convenience (52%),
- anonymity (36%),
- "doctors too busy" (21%),
- difficult to find time to visit a doctor (16%),
- difficulty to get an appointment (13%),
- feeling uncomfortable when seeing a doctor (9%), and
- not being able to afford a doctors' visit (3%).

Further motives elicited through a qualitative analysis of free-text answers were:

- seeking a second opinion(31%),
- discontent with previous doctors and a wish for a primary evaluation of a medical problem,
- asking embarrassing or sensitive questions,
- seeking information on behalf of relatives,
- preferring written communication,
- and (from responses by expatriates, travelers, and others) living far away from regular health care

Umefjord G, Petersson G, Hamberg K. Reasons for consulting a doctor on the Internet: Web survey of users of an Ask the Doctor service. Journal of medical Internet research. 2003 Oct 22;5(4):e899.

Reasons for Consulting on the Internet

Table 2: Number and percentage of responders to the selected alternative responses the question in Box 1*

Multiple-choice Alternative Chosen †	Number	%
It is convenient to ask the question and to read the answer whenever it suits me	640	52
I appreciate the opportunity to ask anonymously	437	36
Doctors are so busy that they do not have time to answer questions	262	21
It is difficult for me to find time to visit doctors	201	16
It has been difficult to get an appointment at a regular health care unit	163	13
I feel uncomfortable when I see a doctor	106	9
I could not afford to see a doctor	38	3

Umefjord G, Petersson G, Hamberg K. Reasons for consulting a doctor on the Internet: Web survey of users of an Ask the Doctor service. Journal of medical Internet research. 2003 Oct 22;5(4):e899.

Second Opinion	31%
Discontent With Previous Doctors	29%
Primary Evaluation of a medical Problem	15%
Convenience, Distance, and Time	14%
Embarrassing Concerns and Worries	4%
Preference for Written Communication	4%

Telenursing and Nurse–Patient Communication

- Efficient and effective uses of telenursing and patients' **positive perceptions** and assess telenursing.
- Increasing **patient access to telenursing** while protecting **nurses from burnout**

Johnson B, Quinlan MM, Marsh JS. Telenursing and Nurse–Patient Communication Within Fertility, Inc. *Journal of Holistic Nursing*. 2018 Mar;36(1):38-53.

Telenursing service and self-management

Health related app used for:

- Management of data and time
- Health records
- Consultations
- Reinforcement of self monitoring
- Data collection
- Clinical decision making
- Patient monitoring
- Education

Results reported

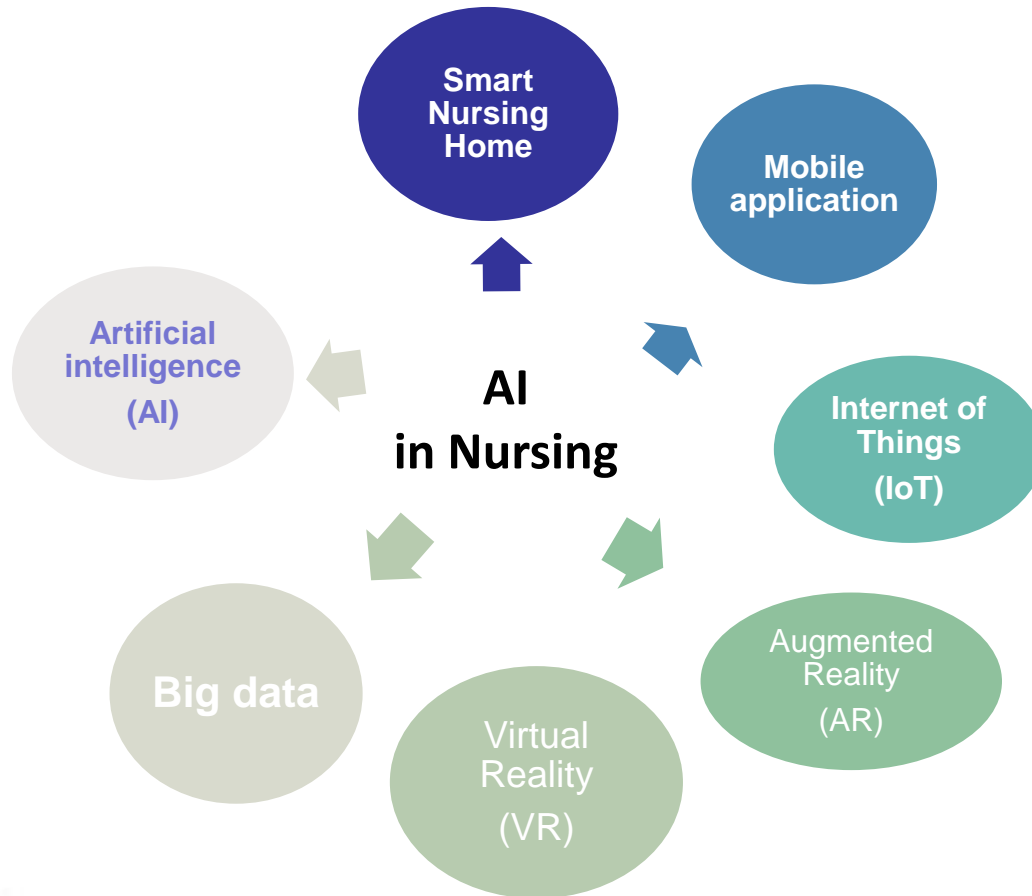
- Significant change and provided **medication reminders**
- Inconsistent effects on **self-management**

Classification of apps interventions:

- **Monitoring:** BP, HR, Weight, BS, Step count
- **Education:** information on the disease, BP measurement methods, medications, diet, exercise, smoking cessation, weight control, and overall lifestyle patterns. This content was delivered mainly in written form
- **Reminder:** medication, monitoring, or lifestyle modification and were delivered via the app, SMS, e-mail, or phone call

Choi JY, Heejung CH, Seomun G, Kim EJ. Mobile-application-based interventions for patients with hypertension and ischemic heart disease: a systematic review. Journal of Nursing Research. 2020 Oct 1;28(5):e117.

Artificial Intelligence and telenursing



- patient sensors
- Monitoring physical and mental conditions of patients
- simulation technology-based learning
- DSS
- Automated alert system
- Care plan Modification
- Modeling
- Forecast
- Meaningful use technology
- dashboard

Zhao Y, Rokhani FZ, Ghazali SS, Chew BH. Defining the concepts of a smart nursing home and its potential technology utilities that integrate medical services and are acceptable to stakeholders: a scoping review protocol. *BMJ open*. 2021 Feb 1;11(2):e041452.

Nurses

Clients

**Smart healthcare applications
In telenursing**

disease prevention

monitoring

diagnosis and treatment of health
conditions

hospital management

health decision making

medical research

The Internet of Things for basic nursing care— A scoping review

Innovations were identified in several topics and categorized in four basic nursing care activities:

- 1.periodical clinical reassessment
- 2.comprehensive assessment
- 3.activities of daily living
- 4.care management

Mieronkoski R, Azimi I, Rahmani AM, Aantaa R, Terävä V, Liljeberg P, Salanterä S. The Internet of Things for basic nursing care—A scoping review. *International journal of nursing studies*. 2017 Apr 1;69:78-90.

periodical clinical reassessment activities of basic nursing care

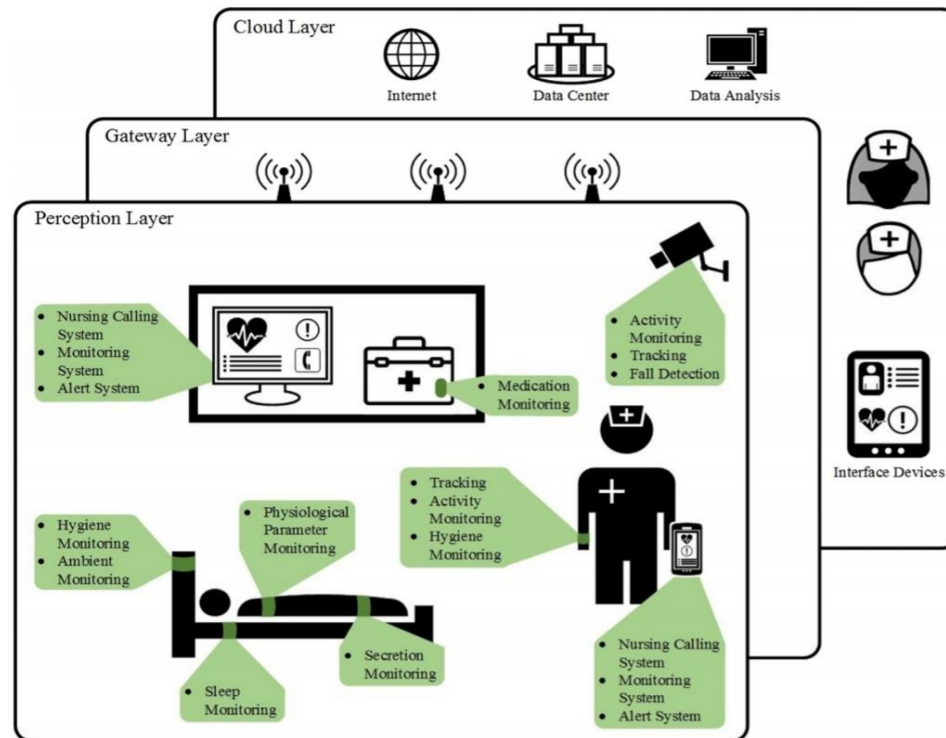
- vital signs detection
- neonatal monitoring
- pain management
- medication

The **I**nternet **o**f **T**hings for basic nursing care—A scoping review

Comprehensive assessment activities of basic nursing care

- topics of hygiene and comfort

R. Mieronkoski et al./International Journal of Nursing Studies 69 (2017) 78–90



The **Internet of Things** for basic nursing care—A scoping review

Activities of daily living of basic nursing care

- Physical activity
- fall detection
- sleep, and secretion monitoring

The **I**nternet **o**f **T**hings for basic nursing care—A scoping review

care management activities of basic nursing care

- topics of decision making support
- tracking personnel, patients and devices
- nurse calling system

The **I**nternet **o**f **T**hings for basic nursing care—A scoping review

- improves trust between patients and professionals: by preserving privacy
- promoting patient safety: by automated tracking of patients and personnel along with fall detection
- Reduces health care associated infections by providing automated hand hygiene detection
- promotes patient safety: by using wireless solutions promote a feeling comfort for all patients particularly in cases of children and disoriented patients
- The opportunity to include family in the care by offering real time data remotely

Effect of Text Messaging-based Psychiatric Nursing Program on Quality of Life in Veterans with Post-Traumatic Stress Disorder: A Randomized Controlled Trial

- to investigate the effect of a text messaging-based psychiatric nursing program on QoL in veterans with PTSD symptom
- The intervention group received psychiatric support via short text messages for 6 months, whereas the control group received the routine hospital care.
- A significant improvement in PTSD ($P=0.001$) and QoL ($P=0.001$) was observed in the intervention group compared to the control group. Moreover, the recurrence frequency in the intervention group was significantly lower ($P=0.03$).
- The text messaging-based psychiatric nursing program reduced the severity of symptoms in veterans with PTSD and improved their QoL

Darvish A, Khodadadi-Hassankiadeh N, Abdoosti S, Ghapandar Kashani M. Effect of Text Messaging-based Psychiatric Nursing Program on Quality of Life in Veterans with Post-Traumatic Stress Disorder: A Randomized Controlled Trial. *IJCBNM*. 2019;7(1):52-62

The contents of the messages

categorized as:

- 1-Welcome message and program introduction
- 2- description of PTSD symptoms, methods of accepting and dealing with PTSD symptoms, self-control
- 3- relaxation and deep breathing skills, anxiety management skills, recurrence prevention assistance, importance of treatment adherence
- 4- methods to deal with insomnia, methods to deal with intrusive thoughts, attitude change and positive thoughts, self confidence and sense of value
- 5- methods to deal with sleep disorders, methods to prevent suicidal thoughts, importance of proper diet and environmental changes
- 7- substance-related addiction self-care, meditation
- 8- messages on special occasions, and closing remarks messages.

example of messages

Below are some examples of messages:

- I can. The feeling of anxiety can cause me no harm. This feeling will end soon. I can take control rather than let anxiety overtake me.
- At an appropriate time, sit or lie down, make yourself comfortable and relax, close your eyes, breathe deeply and slowly, and relax your muscles. Imagine that you can see the colors of the rainbow and everything feels fresh.

QoL domains

- Physical functioning
- Role physical
- Role emotional
- Vitality
- Mental health
- Social function
- Pain
- General health

Society needs telenursing services

We nurses need to study and prepare to provide safe and quality services

PRACTICE GUIDELINES FOR NURSES TELENURSING

revised 2022

The Nova Scotia College of Nursing (NSCN)

- Telenursing
- Professional Practice
- Competencies
- Risk Management
- Context of Practice
- Cross-Jurisdictional
- Practice Informed Consent
- Confidentiality
- Therapeutic Nurse-Client Relationship
- Documentation

<https://cdn1.nscn.ca/sites/default/files/documents/resources/Telenursing.pdf>

?

1- Why nurses and clients choose telenursing?

What's your opinion?

2- Share your experiences of telenursing

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